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Formulation and Evaluation of Lemongrass Hair Oil

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ABSTRACT

The concept of beauty is an ancient mankind and civilization so they use various beauty products that have herb to look charming and young. Herbal cosmatics are now-a-days widely twed by common people because of concept of fewer side effect and wit a better safety and security profile. The present work was aimed to formulate lemon grass hair oil for general purpose (application in hairs) using various herbs. The formulated hair oil was evaluated Various parameters such as viscosity, saponification value.ph etc were determined and reported in this paper

Keywords : Hair Oil, Cymbopogon Citratus, PH, Saponification Value, Acid Value, Specific Gravity Etc

INTRODUCTION

Lemongrass popularly known as citronella grass is the member of poaceae family and belongs to thegenus Cymbopogon.A strong lemongrass a predominant features of this grass is due to high citral content in its oil the redolence of the oil enable its use in soap, detergent, and perfumes.It also finds an application in the pharmaceutical industry apart from the nutrients such as fat, protein, fibre and minerals.it also containsvarious bioactivecompound which may begrouped into alkaloids phenol, saponin and tannin.

According to WHO,herbalmedicine is considered an importantpart of healthcare industry by morethan two- third population of countries Vegetables oils generally used arecoconut oil, castor oil,sesume oil to avoid rancidity of hair oil antioxidant are added in proportionate quantity.

Herbal hair oil hydrates the scalp while also reversing the effects of dry scalp and hair.It contains a variety of vital nutrients that help the sebaceous gland operate and promote natural hair normally growth.

Table 1:- Taxonomical Classification :

Kingdom	**Plantae**
Division	Magnoliophyla
Class	Liliopsida
Order	Poales
Family	Poaceac
Genus	Poaceac
Species	Citrates

Fig :- lemongrass.

- Strengthen of hair follicles.
- Thickens your hair.
- Shine your hair naturally.
- Combats hair loss.
- Eliminates dandruff.

A rich source of iron, lemongrass assists in treating condition such as, Anaemia or other iron deficiencies which can lead to hair loss.

Representingdifferentherbwithdifferent figures used in lemongrass hairoil.

Neem Azadirachta indica (Meliaceae)
Neem, known for it's medicinalproperties is an effective herb to treat hair loss.

Due to its antibacterial, antifungal and anti-inflammatory properties, neem is an 3excellent way to crub dandruff. It helps the hair follicle to become Stronger and also encourages hair growth.
Biological source: It consists of fresh leaves of the plant known as Azadirachta indica. Synonyms :-Hindi- nim, Malayalam- Veppa.

Fig:- Neem

Amla
Emblica officinalis(Euphorbiaceae)

Emblica officinalis is rich in a vitamin C, tannins and minerals such as phosphorus, iron, calcium which provides

nutritionTo hair and also cause darkening of hairIn figure. Partused Fruit .
Chemical constituents :Alkaloid (Phyllantidine, phyllantine), vitamin c, Gallotann(5%), Carbohydrates (14%) Lecture, Minerals, Phenolic acid, Gallic acid, Ellagic acid, Emblicol, Amino acid(Alanine, aspartic acid, Lysine, proline).
Biologicalsource : Dried as well as fresh fruit of the plant Emblica Of ficinalis. Synonym : Emblica, Amla

Fig : Amla

Pudina :
Mint (Labiatae) Mint is rich in natural antimicrobial and anti fungal properties, which treat many scalp issues,especially dandruff. It prevent growth of any unwanted bacteria infection as well on the sealp. Biological source: It Consists dried leaves.Synonyms : Pudina.

Fig: Pudina

Kapur (Camphor)

Cinnamoman camphora (Lauraceae)It has anti fungal properties as well as anti- inflammatory properties which can remove dandruff. Camphor help disinfect your hair If. have been struggling with hair lice camphor can work magic on your hair and kill all lice and Clean your head Synonyms camphor.

Fig : Kapur

Aloevera :
Nourishing Hair Follicles, hydrating the scalp, and minimizing breakage, applying aloe vera gel to the scalp at night may encourage the growth of new hair.

biological source : Selected dried juice extracted through cutting from the underside of the leaves of different aloe species relatives.

Family: Lilliaceae

Fig. Alovera

Kadipatta :
Enhances the health of the scalp increases the growth of hair. restores damaged hair and adds sheen Bounce helps with frizz**.**
Biological source :The plant (murraya koenigii(L), seeng, a small tropical to subtropical tree or shrub. Family : Rutaceeae
Synonym: kariveppu ,Mithra Neem

Fig:- kadipatta

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Til oil Sesamum indicum (Pedaliaceae)

Sesame oil for hair promote good scalp health and encourages hair growth.
Sesame oil has vitamin E, B complex and minerals such as calcium, magnesium,phosphorus and protein that strengthens hair from the root and deeply nourishes.
Biological source:
It is fixed oil obtained from the seeds of Sesamumindicum. Synonyms

Fig :- Til Oil

Need And Objective:-
Need for the Study This study is necessary since there is an increasing need for natural and effective hair care products. Many commercial hair oils include harsh chemicals that can harm your hair and scalp. The purpose of this research is to create a natural hair oil formulation that includes lemongrass powder, til oil, aloe vera, neem powder, and pudina powder, all of which can have a variety of benefits for hair and scalp health natural hair oil formulation using lemongrass powder, til oil, aloe vera, neem powder, and pudina powder, which can give many benefits for hair and scalp health, including

1 Promoting hair growth
2. Reducing dandruff and scalp infections
3. Nourishing and moisturizing hair
4. Improving scalp health

The study's aims are:
1. Create a natural hair oil mixture that includes lemongrass powder, til oil, aloe vera, neem powder, and pudina powder.
2. Determine the physical, chemical, and biological properties of the prepared hair oil Determine the efficacy and safety of the hair oil for encouraging hair growth, decreasing dandruff, and improving scalp health.
3. To evaluate the performance of the designed hair oil to commercial hair oils
4. Create a natural hair oil including lemongrass powder, til oil, aloe vera, neem powder, and pudina powder
5. Assess the physical and chemical qualities of the formulated hair oil
6. Evaluate the effectiveness of the hair oil in increasing hair growth, decreasing dandruff, and improving scalp health.Assess the stability and shelf life of the formulated hair oil.

Plan Of Work:-

1. Conduct a literature review to acquire information about the benefits and potential interactions between the substances

2 Formulation Development Create a formulation based on the literature review and preliminary research

3 Making Herbal Hair Oil Infuse the components like

1. Lemongross Powder

2. Neem Powder,

3. Amla Powder

4. Pudina Powder, 5.Kapur
About All Ingredients In A Suitable Oil Base (Such As Coconut Oil Or Til Oil).

4. Physical Evaluation: Evaluate The Physical Properties Of The Herbal Hair Oil, Such As Color, Odor, And Viscosity

5. Chemical Evaluation Conduct Chemical Evaluations, Such As Ph Testing And Phytochemical Analysis.

6. Stability Studies: Conduct stability studies to determine the shelf life of the herbal hair oil

LITERATURE SURVEY

Sr. No	Name of Author	Title	Abstract
1	Pooja S. Banerjee, Megha Sharma, Rajesh Kumar Nema 2009	Preparation, evaluation and hair growth stimulating activity of herbal hair bil	Herbal formulations always have attracted considerable attention because of theigood activity and comparatively lesser or nil side effects with synthetic drugs The objective of present study. Involves preparation of herbal hair oil using amla, hibiscus, brahmi, methi and its evaluation for increase in hair growth activity
2	Suraj Chavangir, 2 Prof Jyoti Pawar, Onkar Arote. Tejal Waman Ifeb 2004	Review Herbal Hair Oil: A	The concept of beauty and cosmetics is as old as humanity and civilization.Cosmetics play an essential role in human life.Herbal cosmetics is one of the most fruitful areas of cosmetic technology. Herbal cosmetics are developed by the combination of biologically active and pharmaceutical ingredients.
3	T ARAKAWA et al. Tokushima J Exp Med. 1962 May	Effect of Swertinogen on hair growth with special reference to its activities on skin function	Effects of the extract from bergamot and. boxthorn on the delay of skin aging and hair growth in mice
4	Atul pandey and shashikant maury 2022	Formatio n of herbal anti hair fall hair oil	Herbs & herbal drugs are clinically proved good for hair growth. Hair loss problem is of great concern to both males & females & the main problems associated with hair loss are hair fading, dandruff & falling of hair

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MATERIAL AND METHODS

Collection of plant part
Prepration of lemongrass hair oil

Tabel 2:-Ingredients used in lemongrass hair oil :-

Sr.no	Ingredients	Quantity
1	Lemongrass powder	5gm
2	Neem powder	3gm
3	Amla powder	3gm
4	Pudina powder	2gm
5	Aloe vera	2gm
6	Kapur powder	3gm
7	Kadipatta	2gm
8	Til oil	50-60 ml

Formulation lemongrass oil:-
The various ingredients used in the formulation of lemongrass hair oil Accuratelyweigh dried leaves andstalks of lemongrass and other herbs such

1. Neem
2. Amla
3. Pudina 4.kapur 5.kadipata

Were grinded in the mixture and mixed in 40 mlof til oil The above content was boiled for 15min wasfilterd throughcloth

1. To thefiltrate tiloil and aloevera oilwasadded to make up thevolume

2. Finally small amount of colour and falvouring agent was added to the oil and it is was placed in umber coloured bottle.

2. Evaluation of lemongrass hair oil :-

The formulated lemongrass hair oil was subjected to physicaland biological evaluation.

1. **Sensitivity test:-**

The prepared lemongrass hair oilwas applied on 1cmskin of hand and exposed to sunlight for 45 min

2. **Acid value test:-**

1. preparation of 0.1 molar solution:-

- Weighed 0.56g KOH pellets and dissolve in 100ml of distilled water
- Stirred continuosly
- Theprepared 0.1 molar KOH solution was filled in a burette
- Prepration of sample measured 10mloil and
- Dissolve in 25ml of ethanol and 25ml of ether mixture
- Shaked added 1ml of phenolphthaleinsolution and titrated with 0.1 molar KOH solution.

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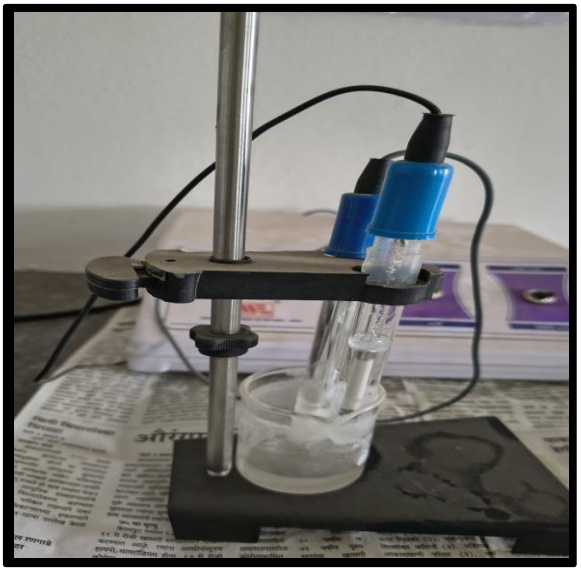
3. **Saponification value:-**

- Accurately weighed 1ml of oil into a 250ml of conical flask and 10ml of ethanol: ether mixture (2:1) was added
- To this flask 25ml of 0.5ml of 0.5n alcoholic KOH kept the flask for 30min
- And the flask cooled
- The cooled solution was titrated against 0.5N HCL using phenolphthalein indicator
- The blanked titration was performed without taking oil(sample)
- Amount of KOH in mg used in calculated

PH

The PH lemongrass hair oil was determined using PH meter



Viscosity :

- The viscosity was determined using ostwalds viscometer specific gravity
- take the specific gravity bottle
- Rinsed if with distilled water
- dry it oven for 15min
- Cool and closed it with cap and weight it
- Now fill the same specific gravity bottle with the sample and and closed it with cap and again weight
- Determined the weight of sample per milimeter by substracting the weight.

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RESULT AND CONCLUSION

Lemongrass hair oil provide numerous essential nutrients required to maintain normal function of subcutaneous glands and promotes natural hair growth, hair oil is one of the most well organized hair treatment, he lemongrass hair oil prepared from various herb given in table. The various parameters like sensitivity test, viscosity, ph, irriatation test, saponification value and acid value of lemongrass hair oil was evaluated, then use of bioactive ingredients in cosmetic formulation have valuable effect on body features and provide nutrients which are essential for maintaining healthy and beautiful hairs. At least it can be concluded that, this lemongrass hair oil formalation has significant quality.

Table 3:-Role of herbs in lemongrass hair oil

Sr. No	Ingredients	Importance
1	Lemongrass	Antibacterial activity
2	Neem	Antimicrobial
3	Amla	Hair growth
4	Pudina	Flavouring agent
5	Kadipatta	Hair growth
6	Kapur	Stimulating agent
7	Aloevera	Anti dandruff
8	Til oil	Vehicle

Table 4:- Evaluation of lemongrass hair

Evaluation parameters	Inference
Sensitivity test	Non sensitivity
Irritant test	Non irritant
PH	6.4
Specific gravity	0.95
Saponification value	195.05
Acid value	4.6
Colour	Yellowish brown
Odour	Aromatic

REFERENCES

[1]. Banerjee, P.S., Sharma, M., Nema, R.K. 2009. Preparation, evaluationand hair growth stimulating activity of herbal hair oil. Journal of Chemical and Pharmaceutical Research, 1(1): 261- 267.
[2]. Mithal, B.M., Shah, R.N. 2000. A Hand Book of Cosmetics. 1st Edition, 141-142.
[3]. Singh, R.M. 1996. Indian Pharmacopoeia. Government of India, Ministry of Health and Family Welfare, Published by, The Controller of Publication, Edition, Vol. II.
[4]. Arakawa T, Emoto K. Utsnomiya S, Hagiwara Y, Shimi-zu T. Effect of Swertinogenin hair growthwith special reference to its activities on skin function. J Exp Med 1962; 9:37- 59.
[5]. Adhirajan N. Ravi Kumar T, Shanmugasundaram N. Babu M. In vivo and in vitro evaluation of hair growth potential of Hibiscus rosasinensis, Linn. J Ethnophar-macol 2003; 88:235-9.
[6]. Han A, Mirmirani P. Clinicalapproach to thepatient with alopecia. Semin Cutan Med Surg 2006:25:11-23
[7]. Bagatell C. Bremner WJ. Androgens in men uses and abuses.w Med 1996; 334:707- 15.
[8]. Olsen EA. Androgenetic alopecia. In: EA Olsen, ed. Dis-orders of Hair Growth: Diagnosis and Treatment. New York: McGraw Hill, Inc; 1993: 257-87.
[9]. Takahashi T. Kamiya T, Yokoo Y. Proanthocyanidins from grapeseeds promote proliferation of mouse hair follicle cells in vitro and converthair cycle in vivo. Ac-ta Derm Venereol 1998; 78:428-32
[10]. Adhirajan N, Dixit VK, Gowri C. Development andevaluation of herbal formulations for hair growth. Indian Drugs 1999; 38:559-63.
[11]. Roy RK, Thakur M. Dixit VK. Effect of Cuscuta reflexa Roxb, On hair growth in albino rats. Indian Drugs 2006; 43 (12): 951-6.
[12]. Lipi, P., Suryaprakash, B. N., C Pande, M. S., Development and evaluation Of herbal formulation of hair growth E-journal Of chemistry, vol-5.No. 1 Jan 2008.34-38.
[13]. Daniel, M., Medicinal Plants Chemistryand Properties, Oxford and IBH Co. Pvt. Ltd., New Delhi, 2006: 123.
[14]. Kokate CK, Purohit A P and Gokhale S B, In, Pharmacogonosy, 19th Ed, Nirali Prakashan, Pune,2002,
[15]. Wagner H. Bladt S, Zgainski FM. Plant drag analysis Verlas, Berlin. 1994; 291- 304,
[16]. Phyto-chemical Methods, A guide to modern techniques of plant analysis 3rd edition, J.B. Harbome, Chapman C Hall, 1998.
[17]. Shah C S. Qudry J S. ATextbook of Pharmacognosy, 11th Ed., B.S. Shah Prakashan, Ahmedabad, 1996; 119.
[18]. N. Sanju, N. Arun and K. K. Roop, Cosmetic Technology, Ist Edition, Birla Publications Pvt. Ltd, Delhi (2006) pp. 379-382.
[19]. S. Kaul and S. Dwivedi, Indigeneous Ayurvedic Knowledge of Some Species in the Treatment of Human Disease and Disorders, Int. J. Pharm. Life Sci., 1(1), 44-49 (2010) 208.
[20]. M. Mithal and R. N. Shah, AHand Book of Cosmetics, Ist Edition, Vallabh Prakashan, Delhi (2000) pp. 141142.21R.
[21]. Shoba Rani Hiremath Textbook of Industrial Pharmacy, Ist Edition, Orient Longaman Pvt. Ltd., Hyderabad (2007) pp. 99-102
[22]. S. C. Bhatia, Perfumes, Soaps, Detergents and Cosmetics, 2nd Edition, CBS Publishers and Distributions, Delhi (2001) pp. 639-641.